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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David Elder

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10/06/2005

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EXAMINER

TIBBITS, PIA FLORENCE

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,703

Applicant(s)

ELDER ET AL.

Examiner

Pia F. Tibbits

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

This Office action is in answer to the amendment and terminal disclaimer filed on 7/21/2005. Claims 37-62 are pending, of which claims 37, 38, 40-42, 44, 45, 48, 49, 52, 56, 57, 59, 61, 62 are amended.

Drawings

1. The drawings are finally objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the SCR, the heat sink, the main battery voltage sensor, the standby battery voltage sensor, the main battery amperage sensor, the standby battery amperage sensor, etc. must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "**Replacement Sheet**" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The amended specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example, in paragraph [0052] "the discharge system can also be a written instruction to manually switch the battery system" still needs to be defined.

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Claim Objections

3. Claims 37 and 60 are objected to because of the following informalities:

Claim 37: --- from the main battery--- to replace "from main battery".

Claim 60: recites "a written instruction to manually switch the battery system to the second operating position for a brief period of time and then to manually switch the switching device to the first operating position", which is not clear since claim 60 depends upon claim 58, reciting a controller with a timer, i.e., automatic controller, and fig.9, "an embodiment of an auxiliary battery discharge cycling system", shows element 700 is a controller connected to switch 300, i.e., automatic controller. To continue prosecution it was assumed that the controller controls the switching to the respective operating position.

Art Rejection Rationale

4. At the outset, the examiner notes that claims are to be given their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process."). In responding to this Office action, applicants are reminded of the requirements of 37 CFR 1.111 and 1.119 that applicants specifically point out the specific distinctions believed to render the claims patentable over the references in presenting responsive arguments. See MPEP 714.02. The support of any amendments made should also be specifically pointed out. See MPEP 2163.06.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 37-42, 45, 54-57 are rejected under 35 U.S.C. 102(b) as being anticipated by **Dierker** [6229279].

Dierker discloses in figures 1-6 a multiple battery system 1 comprising: a battery housing having a common positive terminal and a common negative terminal coupled to an electrical system [see fig.1]; a main battery 2 having a main positive output and a main negative output [see fig.1]; an at least one standby battery 6 having a standby positive output and a standby negative output [see fig.1]; a switching device 10 with at least two operating positions, the at least two operating positions selectively engaging said main battery 2 or said at least one standby battery 6 and comprising;

a first operating position/starting operation of said at least two operating positions wherein the common positive terminal is coupled to the main battery 2 positive output and operates the electrical system from the main battery 2 and is simultaneously coupled to the at least one standby battery 6 positive output through a one-way charging circuit 11 which allows recharging of the at least one standby battery but prevents discharging of the at least one standby battery by the electrical system [see column 2, lines 65-67];

and a second operating position/normal operation of said at least two operating positions which decouples the common positive terminal from the main battery 2 and couples the common positive terminal to the at least one standby battery 6 such that the electrical system operates from the at least one standby battery [see fig.1; column 2, lines 36-67].

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With regard to the limitation of having a battery housing: the battery system, disclosed by Dierker, is part of a vehicle electrical system, and therefore, it is an inherent function of the battery system to be housed in the vehicle, and MPEP 2100 states that the disclosure of a limitation may be expressed, implicit or **inherent**.

As to claim 55, the battery system comprising a sensor in communication with the controller: Dierker discloses sensing the voltage difference between the main battery 2 and the standby battery 6 [see column 2, lines 63-67], and therefore, it is an inherent function of Dierker's battery system to sense the voltage of the two batteries housed in the vehicle, and MPEP 2100 states that the disclosure of a limitation may be expressed, implicit or **inherent**.

As to claims 38-42, 47, 54, 56, 57, 61, see remarks and reference above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above.

Dierker does not disclose the main battery is one of a 6V, 12V, or 24V battery; and the at least one standby battery is one of a 6V, 12V, or 24V battery.

As to claims 43 and 44, the use of a main battery that is one of a 6V, 12V, or 24V battery, and the use of a one auxiliary battery that is one of a 6V, 12V, or 24V battery: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the voltage of the multiple batteries in order to optimally accommodate the needs of the user's system, since

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it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 45, Dierker does not disclose the battery housing further comprises a main battery compartment containing the main battery, and at least one standby battery compartment containing the standby battery, the main battery compartment being located atop the at least one standby battery compartment. As to the battery housing further comprises a main battery compartment containing the main battery, and at least one standby battery compartment containing the standby battery: it would have been obvious to one of ordinary skill in the art at the time the invention was made to make separable the main battery compartment containing the main battery and standby battery compartment containing the standby battery in order to allow for easier positioning around the engine, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961). See MPEP 2144.04. As to the particular location of the main battery compartment, i.e., located atop the at least one standby battery compartment, absent any criticality, is only considered to be an obvious modification as it has been held by the courts that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not thereby be modified. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) MPEP 2144.04

9. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above, in view of **Geibl et al.** [hereinafter Geibl][6143438].

Dierker does not disclose the battery housing further comprising at least one fill tube.

Geibl discloses in fig.6 a fill tube 104, which is part of a battery housing 106 to allow electrolyte to be added to the cells and to permit servicing, if required, during the life of the battery [see column 1, lines 47-49]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Dierker's apparatus and include a fill tube, as disclosed by Geibl, in order to allow electrolyte to be added to the cells and to permit servicing, if required, during the life of the battery.

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10. Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above, in view of **Dougherty et al.** [hereinafter Dougherty][5162164].

As to claim 48, the drawings do not show a SCR. To continue prosecution it was assumed that the unidirectional current path through the one-way charging diode needs an overcurrent protection device, such as an SCR/thyristor, to selectively limits current through the diode.

Dierker does not disclose a SCR.

Dougherty discloses in a dual battery system that a unidirectional current path 108 suitably comprises a diode 110 and an overcurrent protection device 112, suitably a variable resistor, polyswitch, solid-state transistor, **SCR**/thyristor, or any device, which selectively limits current through the diode [see also column 13, lines 1-10]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify McDermott's and Bromley's apparatus and include an overcurrent protection device such as an SCR, as disclosed by Dougherty, in order to selectively limit current through the one-way charging diode.

As to claim 49: "**between about** 25 and 95 amperage rating" is indefinite since there is nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "**between about**". To continue prosecution it was assumed that "between 25 and 95 amperage rating" is considered.

As to claim 49, an SCR, having between 25 and 95 amperage rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the amperage of the SCR in order to optimally limit the current through the diode, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 50, the main battery being a 12 V automobile battery, and the SCR having a 12V, 45 Amp rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the main battery voltage and the voltage and amperage of the SCR in order to optimally accommodate the needs of the user's system, since it has been held that

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discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

11. Claims 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above, in view of **van der Merwe** [5631535].

As to claim 51, Dierker does not disclose a high capacity diode and an at least one heat sink coupled to the at least one high capacity diode.

As to the use of a high capacity diode: it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a high capacity diode, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

van der Merwe discloses a heat sink 60 adjacent to a high-capacity diode D1 to dissipate heat generated by current flowing through the diode D1 [see fig.3; column 3, lines 20-22]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Dierker's apparatus and include a heat sink 60 adjacent to a high-capacity diode, as disclosed by van der Merwe, in order to dissipate heat generated by current flowing through the diode.

As to claim 52, the high capacity diode having between 25 and 95 amperage rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the amperage of the high capacity diode in order to optimally accommodate the needs of the user's system, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claim 53: the recitation "heat sink ...has a **sufficient surface** area to dissipate the heat" is indefinite since there is nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "sufficient surface".

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As to claim 53, the high capacity diode having a 12V, 45 Amp rating: it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a selection for the voltage and amperage of the high capacity diode in order to optimally accommodate the needs of the user's system, since it has been held that discovering an "optimum" or "preferred" value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

12. Claims 58, 59, 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above, in view of **Koenck et al.** [hereinafter Koenck] [4709202].

As to claim 58, Dierker does not disclose the discharge system comprises a controller with a timer.

Koenck discloses a battery cycling/charge-discharge/conditioning system using a battery controller/microprocessor 14 [see fig.2] with a timer [see fig.11] where an embodiment includes a main battery and a backup battery, the voltage of each may be individually measured, and each may be conditioned [see the abstract], since a battery may deteriorate when subjected to repeated shallow discharge and recharging cycles, a count of such shallow cycles may be automatically maintained throughout the operating life of the battery system, such that deep discharge cycles may be effected as necessary to maintain desired performance standards [see column 1, line 50-56]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Dierker's apparatus and include a timer in the standby battery's discharge system, as disclosed by Koenck, in order to be able to automatically maintain desired performance standards.

As to claim 59, "short periods" is a) indefinite, and b) since "the controller with a timer" (claim 58) control the process, the duration/period will be determined according to the specific needs of the battery, which is inherent to the apparatus discloses by Dierker and Koenck.

As to claim 62, see remarks and references above.

13. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dierker**, as described above, in view of **Dougherty et al.** [hereinafter Dougherty][5316868].

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As to claim 60, Dierker does not disclose the discharge system comprises a written instruction to manually switch the battery system to the second operating position for a brief period of time and then to manually switch the switching device to the first operating position.

Dougherty discloses some systems provide a manual switch to actuate the coupling of the auxiliary battery to the main battery so that the auxiliary battery is coupled in parallel to the main battery in response to an indication that the main battery needs a power boost [see column 1, lines 35-37]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Dierker's apparatus and include a manual switch, as disclosed by Dougherty, in order to couple the standby battery in parallel to the main battery in response to an indication that the main battery needs a power boost.

As to a written instruction to manually switch the battery system, one skilled in the art would be able to provide a written instruction as to when manually switch the battery system without undue experimentation.

Response to Arguments

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection. Applicant amended the claim to include "operates the electrical system from the main battery and is simultaneously coupled to the at least one standby battery", and "allows recharging of the at least one standby battery but prevents discharging of the at least one standby battery by the electrical system", which is new issue.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited in PTO-892 and not mentioned above disclose related apparatus: **Cook et al.**

[6734651], **Dierker** [6276001], **Dougherty et al.** [6271642] and [6222341] all disclose a switchable dual battery system.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (571) 272-2086. If unavailable, contact the Supervisory Patent Examiner Mike Sherry whose telephone number is (571) 272-2084. The Technology Center Fax number is (703) 872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFT

September 30, 2005

Pia Tibbits

Primary Patent Examiner